

Remarks

Claims 1-95 were pending in the subject application. By this Amendment, claims 10, 11, 14, 16, 27, 36-39, 41-44, 46, 48, 50, 51, 52, 55 and 61 have been amended and claims 7, 18, 26, 56, 57, 60, and 62-95 have been withdrawn. The undersigned avers that no new matter is introduced by this amendment. Entry and consideration of the amendments presented herein is respectfully requested. Accordingly, claims 1-6, 8-17, 19-25, 27-55, 58, 59, 61, and 96 are currently pending in the subject application.

The amendments to the claims have been made in an effort to lend greater clarity to the claimed subject matter and to expedite prosecution. These amendments should not be taken to indicate the applicants' agreement with, or acquiescence to, the rejections of record. Favorable consideration of the claims now presented, in view of the remarks and amendments set forth herein, is earnestly solicited.

Claims 10, 11, 14, 16, 51 and 55 have been amended to replace "the hollow volume" with "the volume" to be consistent with the antecedent basis provided in claim 4.

Claim 27 has been amended to correct a typographical error and replace "the positive displacement" with "the positive displacement means" to be consistent with the antecedent basis provided in claim 25.

Claim 32 has been amended to delete an unnecessary ".".

Claim 36 has been amended to complete the claim with the following limitation, wherein the plurality of fins "increase the surface area of the outside housing, wherein the increased surface area of the outside housing improves heat transfer from the outside housing.

Claims 37, 38, 39, 41, 42, 43, 44, 46, and 48 have been amended to replace "the exterior surface" with "the heat transfer surface" to be consistent with the antecedent basis provided in claim 1.

Claims 48 and 50 have been amended have been amended to replace "the exterior surface" with "the heat transfer surface" to be consistent with the antecedent basis provided in claim 1.

Claim 50 has been amended to depend from claim 4 rather than claim 1 to provide antecedent basis for "the volume" and "the second surface of the condenser" in claim 51, which depends from claim 50.

Claim 52 has been amended to depend from claim 50 rather than claim 1.

Claim 61 has been amended to add a “.” at the end of the claim.

Withdrawn claim 64 has been amended to replace “the volume” with “a volume” to provide proper antecedent basis.

Claims 74, 75, 76, 78, 79, 80, 81, 82, 84, 87, and 88 have been amended to replace “the exterior surface” with “the heat transfer surface” to be consistent with the antecedent basis provided in claim 62.

Claims 84 and 86 have been amended to replace “the surface of the heat transfer surface” with “the heat transfer surface” to be consistent with the antecedent basis provided in claim 62.

Claim 87 has been amended to incorporate the limitation “wherein the condenser comprises a second surface, wherein the second surface is substantially parallel to the heat transfer surface, wherein the condenser has a substantially tubular shape having a first end and a second end, wherein the heat transfer surface is on the exterior side of the substantially tubular shaped condenser and the second surface is on the interior side of the substantially tubular shaped condenser, wherein a volume is formed by the second surface of the substantially tubular shaped condenser” in order to provide antecedent basis for “the volume” and “the second surface of the condenser”.

Claim 88 has been amended to depend from claim 64 rather than claim 62.

New claims 96 and 97 have been added. Support for new claim 96 can be found, at least, at page 17, lines 7-12. Support for new claim 97 can be found, at least, at page 22, lines 14-15.

Claims 1-6, 8, 19, 21, 22, 24, 30, 37-40, 50-55, and 58 have been rejected under 35 USC §102(b) as anticipated by Webber (U.S. Patent No. 3,926,008). The applicants respectfully traverse this grounds for rejection. The Office Action, at page 2, states “Webber discloses a refrigeration system having a condenser and means 28 for flowing a first external fluid across the condenser wherein the fluid flow is parallel with the heat transfer surface of the condenser.” However, the applicants submit that the Webber reference does not teach a means for flowing a first external fluid across the condenser wherein the fluid flow is parallel with the heat transfer surface of the condenser. Instead, the condenser **22** of the Webber reference is a “conventional air-cooled condenser” (col. 1, lines 38-39). Although upon a cursory review of Figure 1 of the Webber reference it might appear that the fan **28** causes a first external fluid to flow from the right side to the left side of Figure 1, across the condenser parallel with the surface of the piping of the condenser **22**, the applicants assert

this is not the case. Rather, Figure 1 of the Webber reference provides a schematic representation of condenser **22** and fan **28** for the cooling and heating system, not a three-dimensional representation. The applicants assert the air from fan **28** would flow into, or out of, the page with respect to Figure 1 of the Webber reference, therefore flowing perpendicular to the surface of the piping of condenser **22**. Specifically, as in conventional air-cooled condensers, the fan **28** would cause air to flow into, or out of, the page through the fins, represented by grate lines that are drawn perpendicular to the piping of condenser **22** in Figure 1 of the Webber reference.

In contrast, the subject apparatus as claimed in claim 1 incorporates a condenser having a heat transfer surface and a means for flowing a first external fluid substantially parallel with the heat transfer surface of the condenser.

Furthermore, the subject apparatus for cooling as claimed in claim 4 incorporates the limitation “wherein the condenser comprises a second surface, wherein the second surface is substantially parallel to the heat transfer surface, wherein the condenser has a substantially tubular shape having a first end and a second end, wherein the heat transfer surface is on the exterior side of the substantially tubular shaped condenser and the second surface is on the interior side of the substantially tubular shaped condenser.” The apparatus disclosed in the Webber reference does not meet this limitation. Rather, the apparatus disclosed in the Webber reference incorporates piping that carries the refrigerant. In contrast to the teaching of the Webber reference, the apparatus claimed in claim 4 of the subject application incorporates a condenser having a heat transfer surface and a second surface, wherein the second surface is substantially parallel to the heat transfer surface. With respect to the apparatus of claim 4, the condenser has a substantially tubular shape having a first end and a second end, wherein the heat transfer surface is on the exterior side of the substantially tubular shaped condenser and the second surface is on the interior side of the substantially tubular shaped condenser. In this way, the condenser is between the heat transfer surface and the second surface, inclusive. In fact, a volume is formed by the second surface of the substantially tubular shaped condenser, as claimed. The piping of the Webber condenser **22** has no such second surface.

The subject apparatus as claimed in claim 5, which depends from claim 4, incorporates the limitation “wherein the flow of the first external fluid is substantially from the first end of the condenser to the second end of the condenser”. The apparatus disclosed in the Webber reference does not meet this limitation.

With respect to claim 52, the Webber reference does not teach or suggest an apparatus having an outer layer, wherein the outer layer surrounds the heat transfer surface of the condenser so as to form a second volume between the heat transfer surface of the condenser and the outer layer.

With respect to claim 53, the apparatus disclosed in the Webber reference does not meet the limitation wherein the first external fluid flowing across the heat transfer surface of the condenser flows from the first end of the condenser toward the second end of the condenser.

Likewise, the apparatus disclosed in the Webber reference does not meet the limitations of the invention of claims 54 and 55, namely, “a means for flowing a portion of the first external fluid through the volume formed by the second surface of the condenser from the first end of the condenser to the second end of the condenser” and “wherein the volume between the outer layer and the heat transfer surface of the condenser is at a lower temperature than the volume formed by the second surface of the condenser”, respectively.

With respect to the apparatus as claimed in claim 58, the Webber reference does not teach or suggest an apparatus wherein the condenser comprises a first element and a second element, wherein the first element is inserted inside of the second element such that a duct is formed between the first element and the second element for the flow of the compressed refrigerant vapor through the condenser. Reference is made to Figures 8A and 8B of the subject application for a specific embodiment of an apparatus as claimed in claim 58.

Therefore, a proper §102 rejection has not been presented with respect to claims 1-6, 8, 19, 21, 22, 24, 30, 37-40, 50-55, and 58. Accordingly, the applicant respectfully requests reconsideration and withdrawal of the rejection of claims 1-6, 8, 19, 21, 22, 24, 30, 37-40, 50-55, and 58 under 35 U.S.C. §102(b).

Claims 23, 25, 41-47, 59, and 61 have been rejected under 35 USC §103(a) as being unpatentable over Webber (U.S. Patent No. 3,926,008). The applicants respectfully traverse this grounds for rejection because the cited reference does not disclose or suggest the unique and advantageous apparatus claimed by the current applicants. The limitations of the Webber reference have been discussed above with respect to the rejection of claim 1 from which claims 23, 25, 41-47, 59, and 61 depend. Accordingly, the applicants respectfully request reconsideration and withdrawal of the rejection of claims 23, 25, 41-47, 59, and 61 under 35 U.S.C. §103(a).

Claim 20 has been rejected under 35 USC §103(a) as being unpatentable over Webber (U.S. Patent No. 3,926,008) in view of Wang (U.S. Patent No. 5,950,445). The applicants respectfully traverse this grounds for rejection because the cited references, alone or in combination do not disclose or suggest the unique and advantageous apparatus claimed by the current applicants. The limitations of the Webber reference with respect to claim 1, from which claim 20 depends has been discussed above. The Wang reference does not cure this defect. Accordingly, the applicants respectfully request reconsideration and withdrawal of the rejection of claim 20 under 35 U.S.C. §103(a).

Claims 48 and 49 have been rejected under 35 USC §103(a) as being unpatentable over Webber (U.S. Patent No. 3,926,008) in view of Reagan *et al.* (U.S. Patent No. 6,370,775). The applicants respectfully traverse this grounds for rejection because the cited references, alone or in combination do not disclose or suggest the unique and advantageous apparatus claimed by the current applicants. The limitations of the Webber reference with respect to claims 1, 37, 38, and 47 from which claims 48 and 49 depend has been discussed above. The Reagan *et al.* reference does not cure this defect. Accordingly, the applicants respectfully request reconsideration and withdrawal of the rejection of claims 48 and 49 under 35 U.S.C. §103(a).

On page 3 and 4 of the Office Action, claims 9-17 are rejected under 35 USC §112. The Office Action states that “claim 4, from which these claims depend, recites that the second surface is on the interior side of the tubular shaped condenser ... [t]his appears to mean that the second surface is inside the tubular shaped condenser, that is, inside the conduit or pipe.” Reference to, at least, the embodiments shown in Figures 2, 4, 5, 8A, 8B, and 11, as well to the specification at page 8, lines 17-23; page 9, lines 4-9; page 15, lines 6-8; page 22, line 6-7; and page 21, line 27 through page 22, line 1, which teaches “one or more of the components of the subject cooling system can be located, at least partially and preferably substantially, within the volume created by the inner surface **800** of the condenser, is made to provide for support for the subject invention as claimed in claim 4. The Office Action, at page 4, states “[t]hus, claims 9-11 appear to recite that the various refrigeration components are located inside the conduit or pipe that forms the condenser.” Referring to Figures 2, 4, 5, and 8A, tube **890** or annulus **840** carries the refrigerant between the heat transfer surface **880** and inner surface **800**, such that a volume is created by inner surface **800** that various refrigeration components can be located inside this volume created by inner surface **800**. Therefore, claims 9-17

particularly point out and claim the subject matter which applicants regard as the invention. Accordingly, the applicants respectfully request reconsideration and withdrawal of the rejection of claims 9-17 under 35 U.S.C. §112, first paragraph.

Enclosed with this Amendment are copies of Figures 2, 4, and 5 with proposed edits shown in red. These proposed edits add the reference numbers 880, 800 and 880, and 800 and 880 to Figures 2, 4, and 5, respectively. Support for these proposed amendments can be found, at least, at Figures 8A and 8B; page 21, line 24 through page 22, line 1; page 22, lines 112-15; and page 9, lines 6-13. The undersigned avers that no new matter is introduced by these proposed edits. Entry of these proposed edits is respectfully requested.

Claim 61 has been objected to for lacking a period at the end of the claim. Claim 61 has been amended to include a period at the end of the claim. Accordingly, the applicants respectfully request reconsideration and withdrawal of the objection of claim 61.

Claim 36 has been objected to for being indefinite for being incomplete. Claim 36 has been amended to complete the claim with the following limitation, wherein the plurality of fins “increase the surface area of the outside housing, wherein the increased surface area of the outside housing improves heat transfer from the outside housing. Accordingly, the applicants respectfully request reconsideration and removal of the objection of claim 36.

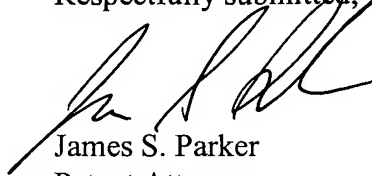
In view of the foregoing remarks and amendments to the claims, the applicants believe that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§1.16 or 1.17 as required by this paper to Deposit Account 19-0065.

The applicants invite the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephonic interview would expedite the prosecution of the subject application to completion.

Applicant invites the Examiner to call the undersigned if clarification is needed on any aspect of this response, or if the Examiner believes there remains any valid ground upon which any claim in this application may be rejected subsequent to entrance of this amendment.

Respectfully submitted,



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Attachments: 1. Amended red-lined Figures 2, 4, 5 (3 pages)
2. Formal corrected Figures 2, 4 and 5 (3 pages)

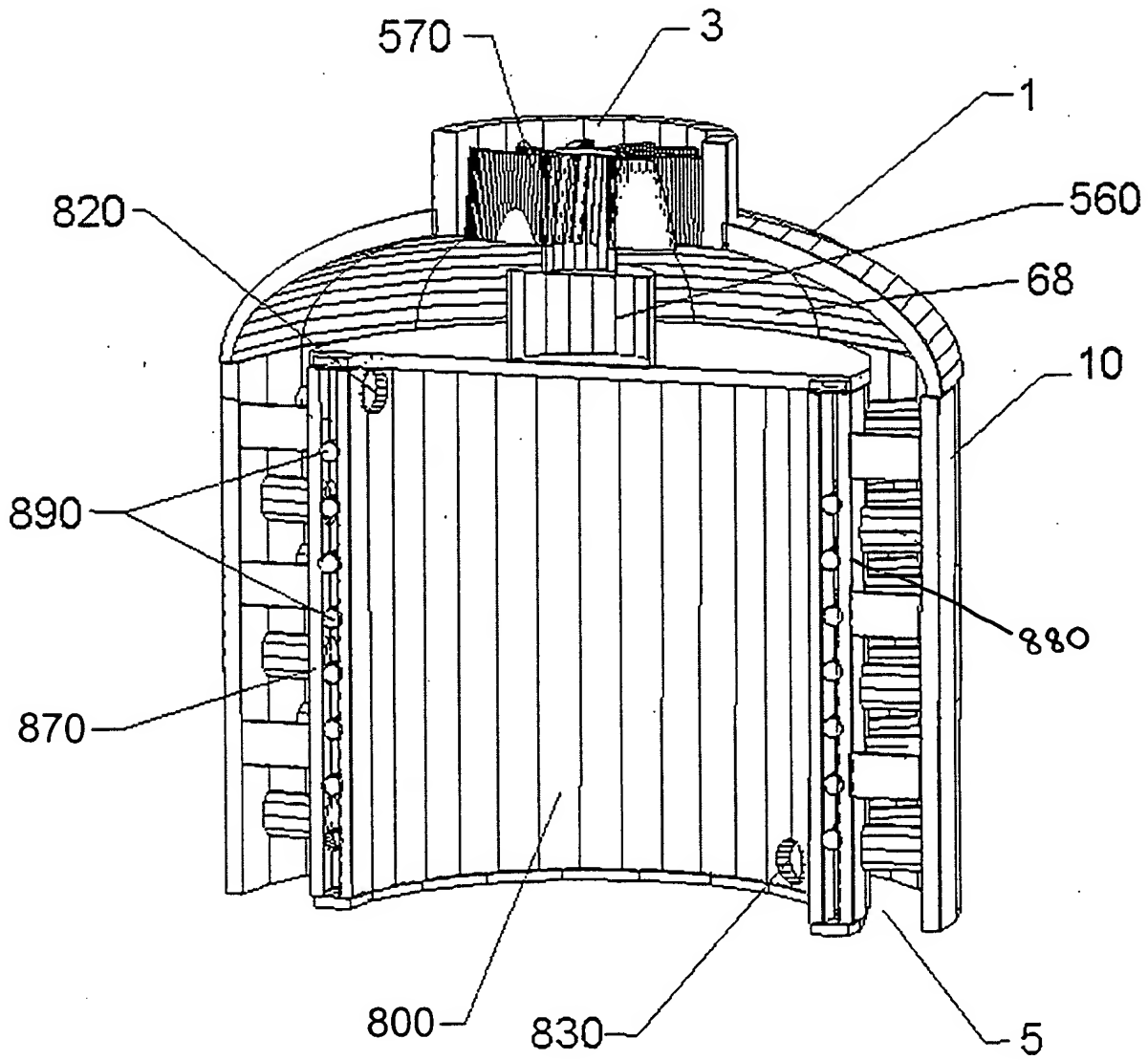


Figure 2

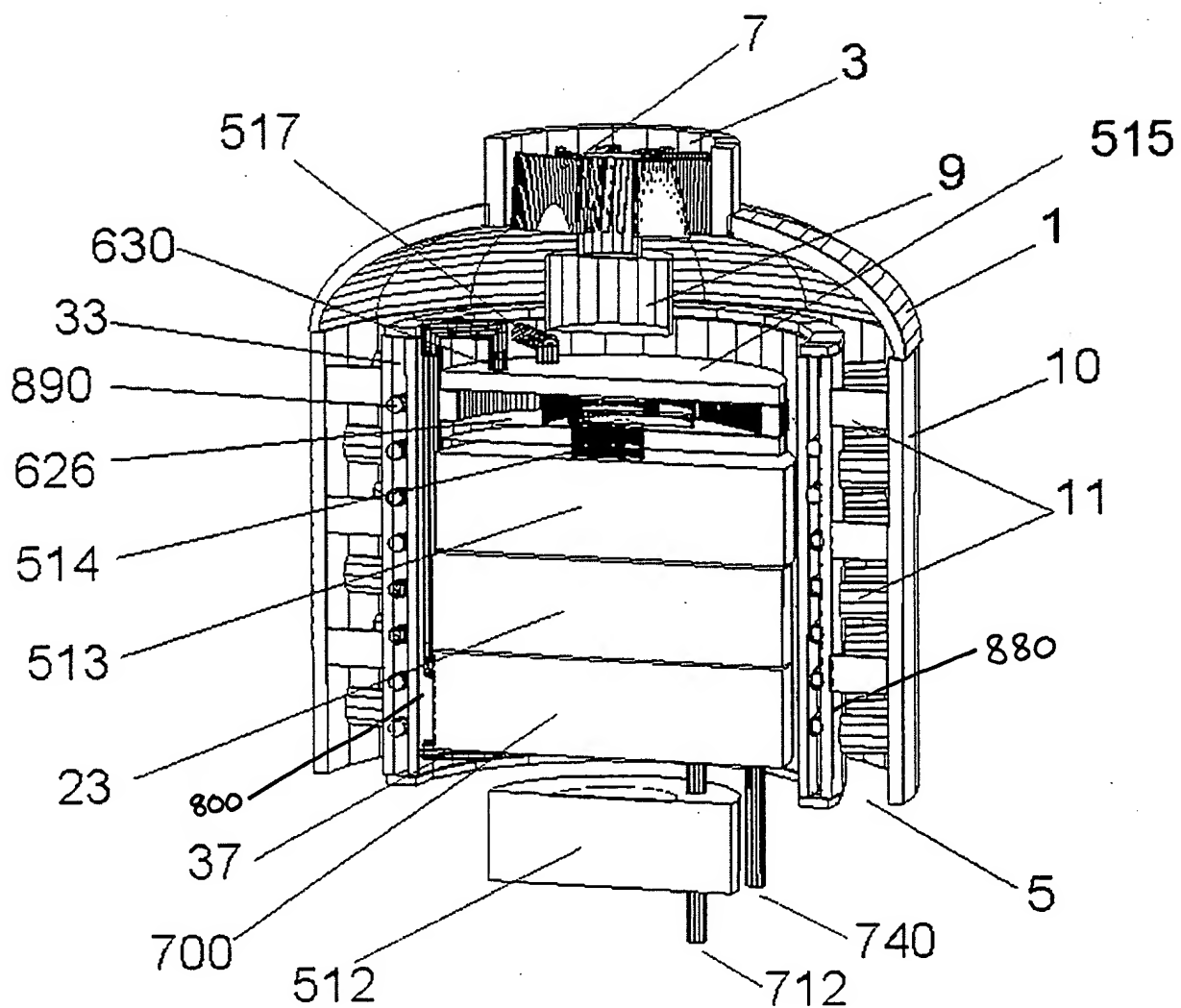


Figure 4

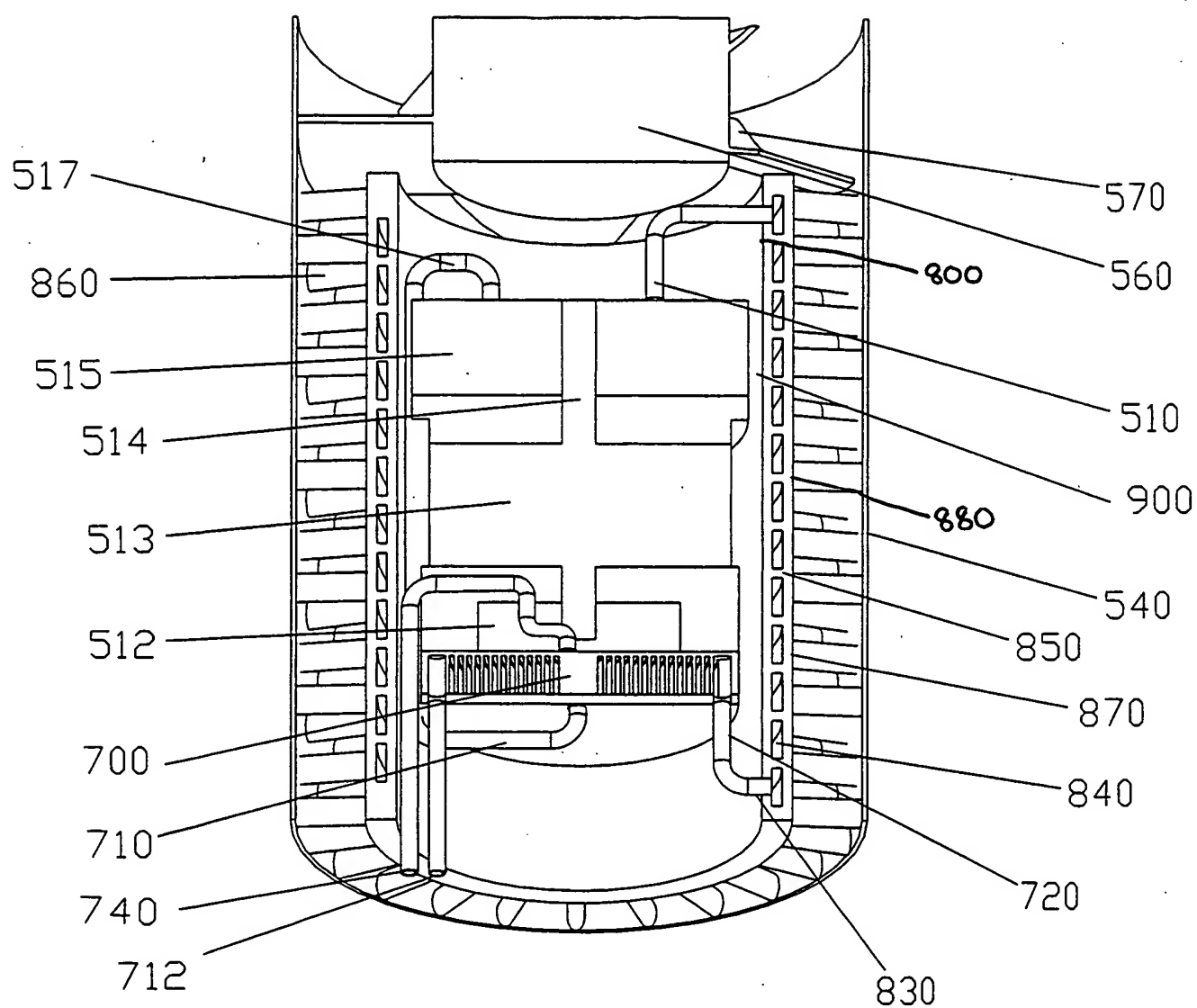


FIG. 5